

Game Design Workshop: Designing, Prototyping and Playtesting Games

Chris Swain

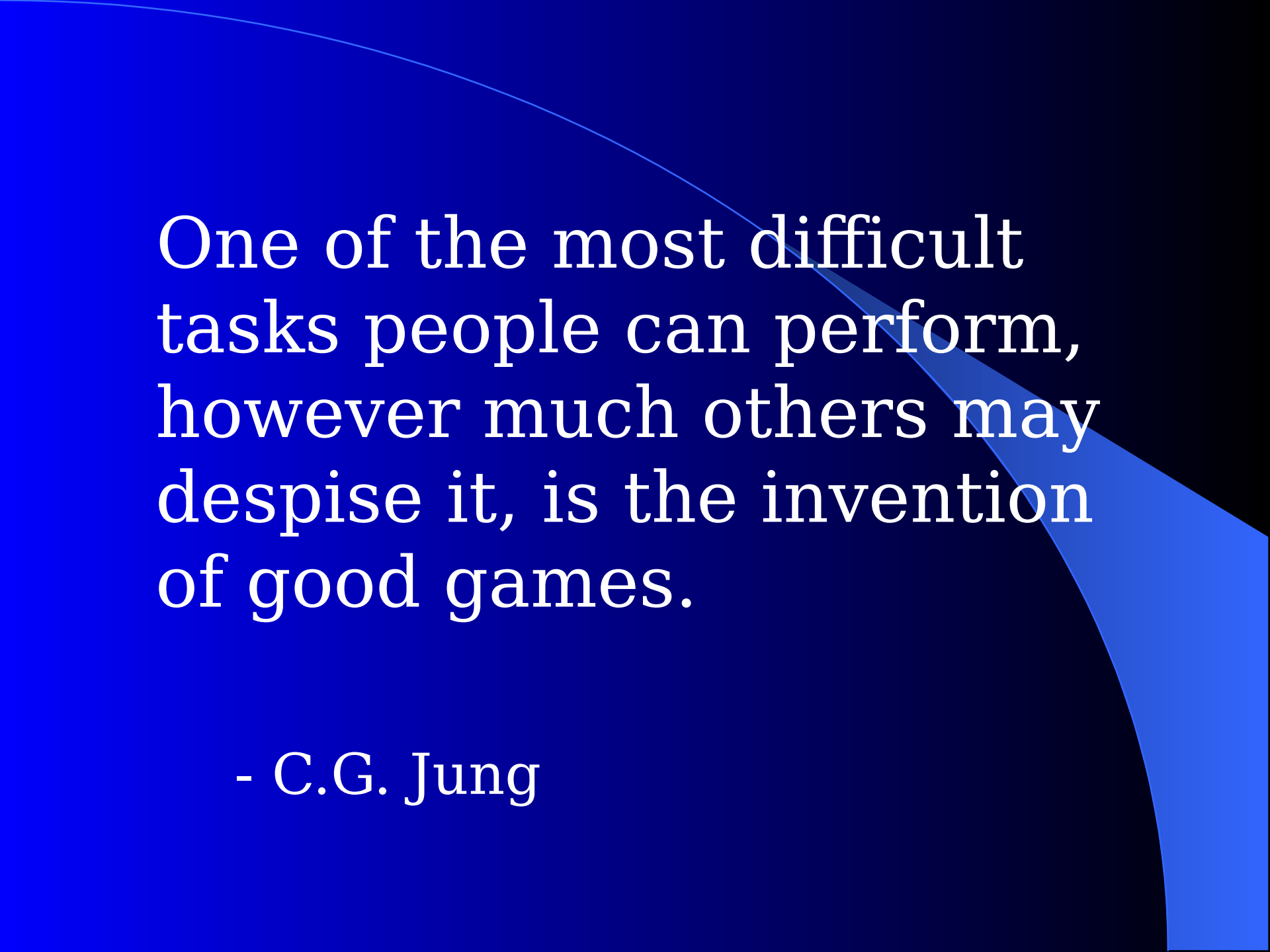
Visiting Professor, USC School of
Cinema

Co-Director, Electronic Arts Game
Innovation Lab

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Agenda

10 am – 11:20 am	Lecture
11:20 am – 12 pm	In-class Design Exercise
12 pm – 1 pm	Discussion (optional)

The background is a dark blue gradient. A thin, light blue curved line starts from the top left and arcs towards the right. A larger, lighter blue triangular shape is positioned on the right side, pointing towards the center.

One of the most difficult tasks people can perform, however much others may despise it, is the invention of good games.

- C.G. Jung

About this Workshop

- CTIN 488: Game Design Workshop
 - A hands-on workshop course in designing game play offered in the Cinema school since 1999
 - Course taught over the years at USC, City U of Hong Kong, School of Visual Arts in NYC
 - Combination of theory, history and hands-on design
 - Foundation course for the USC games program

About me

- Professional game designer for 12 years, professor for 8 years
- Co-author of “Game Design Workshop: Designing, Prototyping and Playtesting Games”
 - Exercise-driven book on game design published by CMP Media, parent company of the Game Developer’s Conference and Gamasutra.com.
- Designer of 150+ games and interactive products. Clients include:
 - Disney - Microsoft
 - Sony - Acclaim
 - Activision - Intel
 - MTV - Many more ...

GAME DESIGN WORKSHOP

Designing, Prototyping
and Playtesting Games



Tracy Fullerton
Christopher Swain
and Steven Hoffman

Workshop Focuses on *Game Play*

- Q: What is game play innovation?
 - A: Creating original play systems
- Q: Why is it important?
 - A: Develops long term critical thinking skills for interactive media
 - A: Necessary to expand what games are and can be for education and entertainment
- Q: What are methods for success?
 - A: Playcentric Game Design

Playcentric Game Design

- Step 1: Understand fundamental aspects of games:
 - Formal
 - Dramatic
 - Dynamic
- Step 2: Learn core process for developing games:
 - Iterative design cycle
 - Prototyping, playtesting and revising gameplay
 - Collaboration
- Step 3: Practice, practice, practice
 - Everyone gets to design games - regardless of technical skills
 - Everyone learns to critique games as playable *systems*

Early process is least understood and hardest to teach

- 1) Ideation
- 2) Physical Prototype
- 3) Presentation
- 4) Software Prototype
- 5) Design Doc
- 6) Production













The Role of the Game Designer

- The game designer as “advocate for the player.”
- Defines the rules, procedures, potentials for play as a system.
- Tests that system in action.
- Focuses on gameplay and the player experience – not art or programming



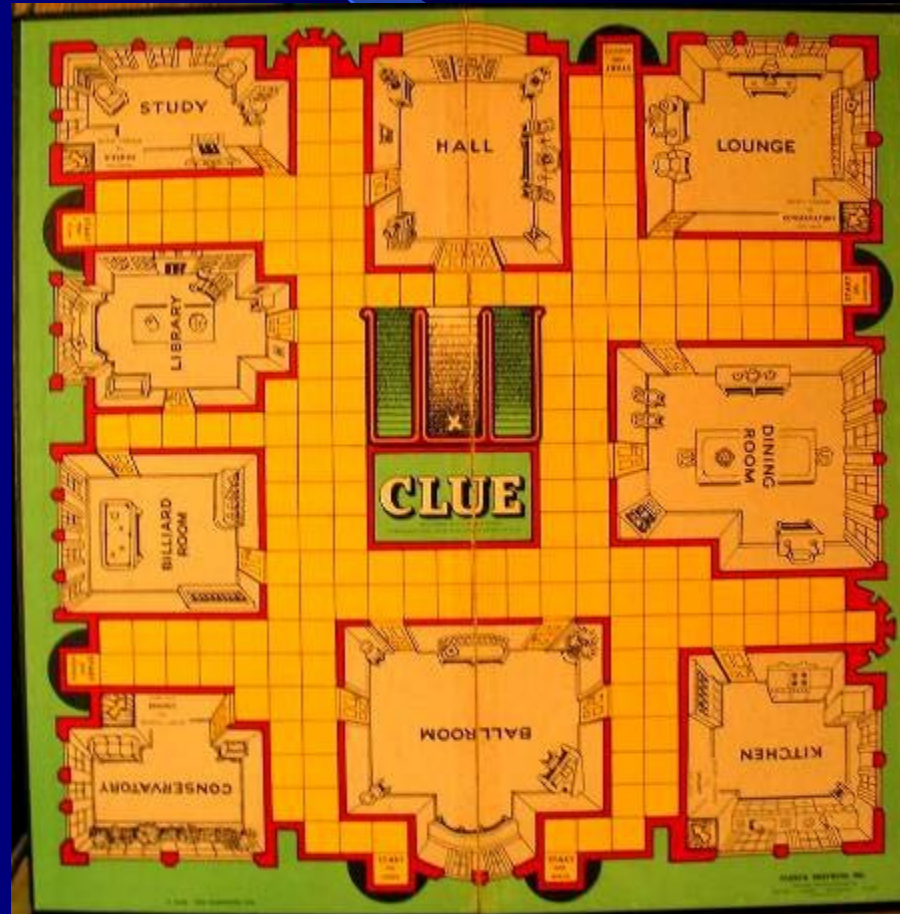
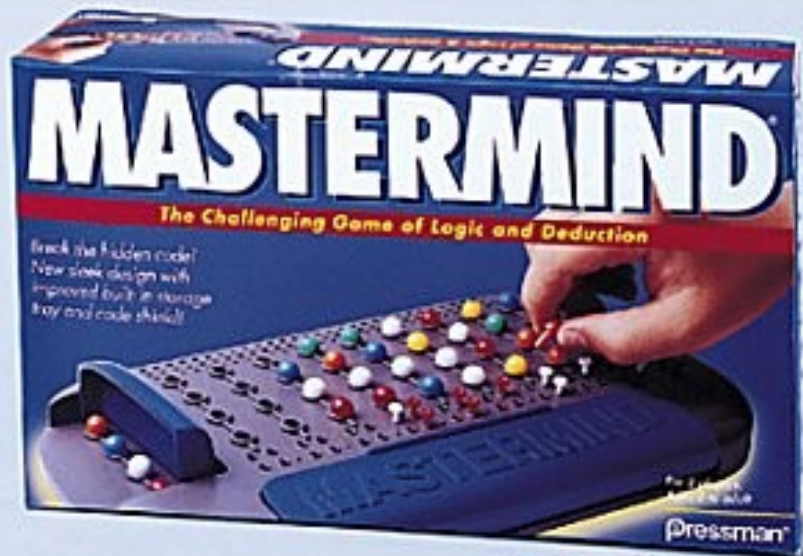
Formal Elements of Games

- Those aspects which give the medium its distinct form – often called “game mechanics:”
 - Players
 - Objectives
 - Procedures
 - Rules
 - Resources
 - Conflict
 - Boundaries
 - Outcome

Formal Elements

- Procedural
 - Objectives = define the central conflict
 - Rules = define the behavior within the system
- Mathematical
 - Misc System Variables

Procedural Example: Objective



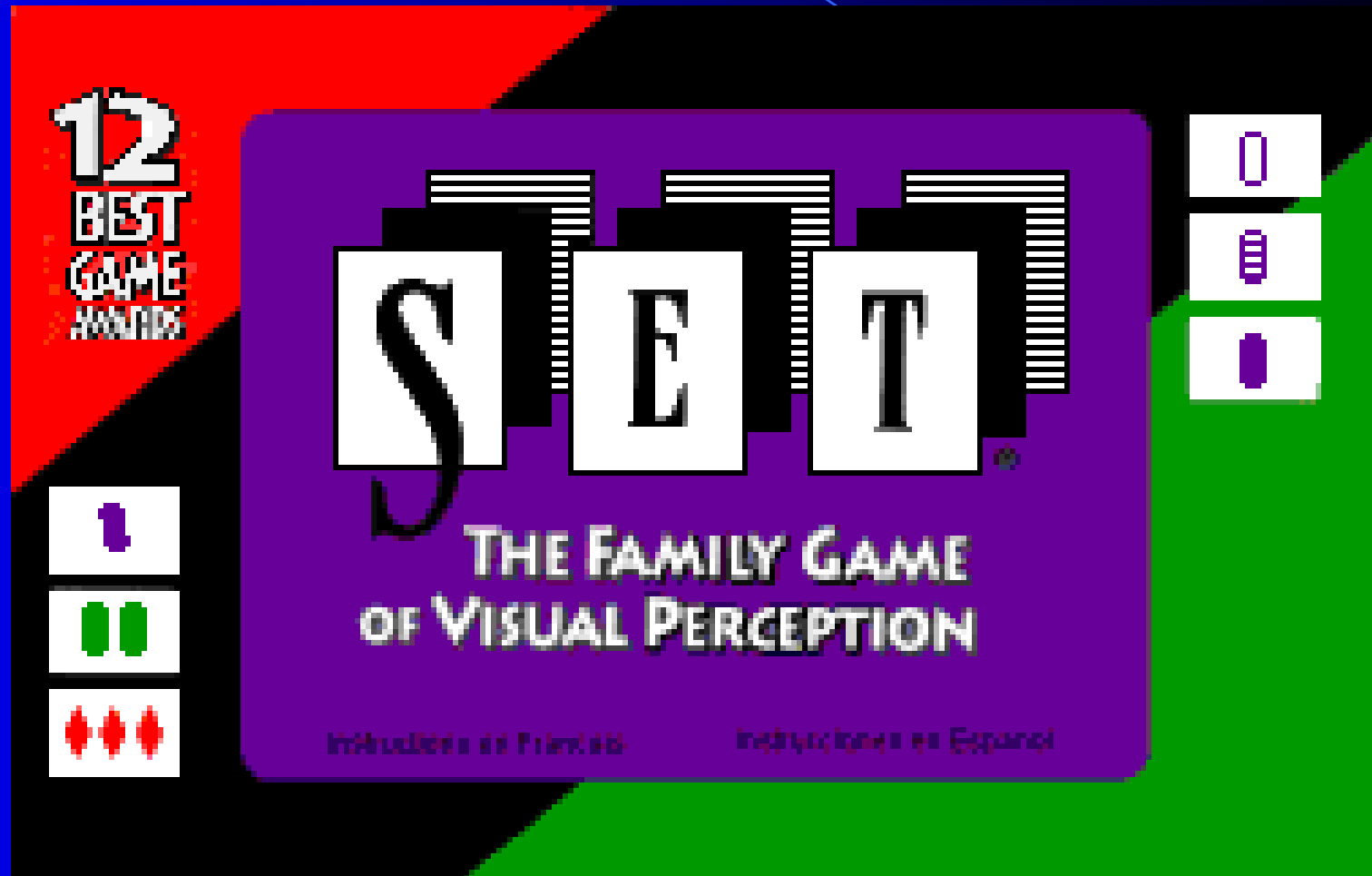
Procedural Example: Objective

- Mastermind vs Clue
 - Objective is the same for both games – solve the code
 - Other formal elements are different
 - # of Players, Resources, Conflict, Outcome, Procedures, Boundaries, Rules
 - Difference is in dramatic elements
 - Character, Premise, Story, Play
 - Example provides a glimpse at how games are systems that we, as designers can tune to create different kinds of experiences

Mathematical System Elements

- System variables such as:
 - Number of spaces on the board
 - Number of seconds in a turn
 - Number of hit points
 - Number of spaces a unit can move
 - Number of cards in a deck
 - Etc.

Mathematical Example: System Variables

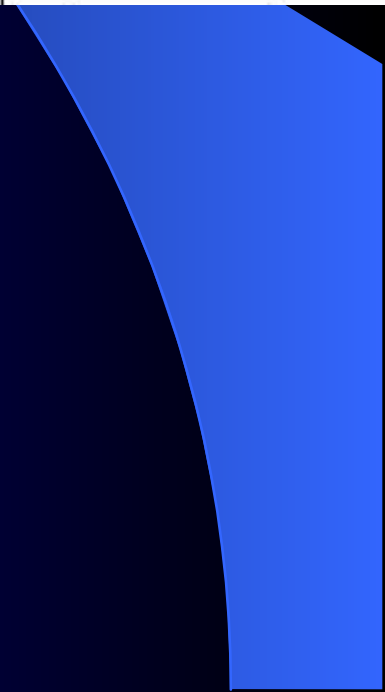


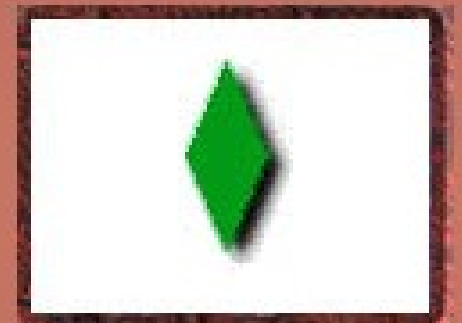
Rules of Set

- A 'Set' consists of three cards in which each feature is EITHER the same on each card OR is different on each card. That is to say, any feature in the 'Set' of three cards is either common to all three cards or is different on each card.



	A	B	C	
Shape	Oval	Diamond	Squiggle	(unique cards = 3)





A

1



2



3

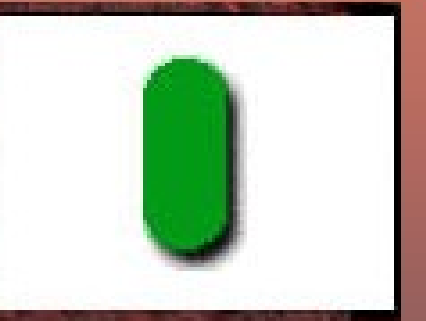


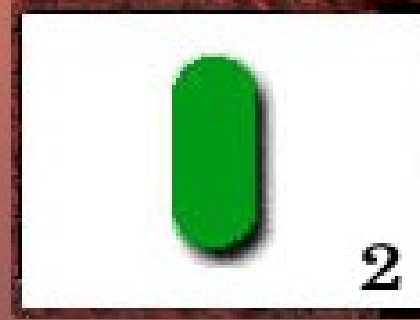
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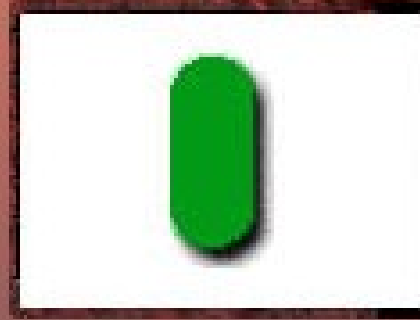


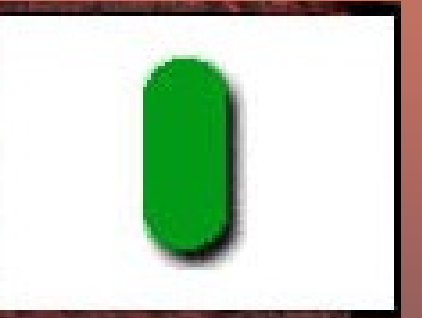
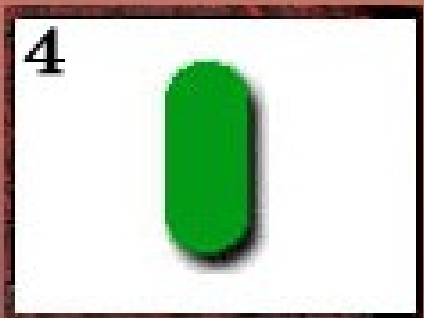
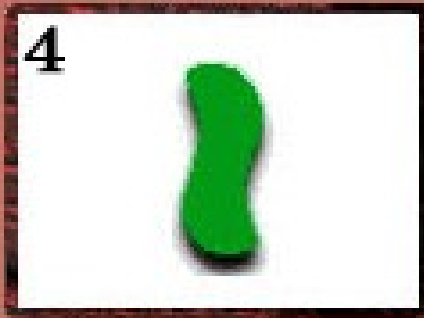
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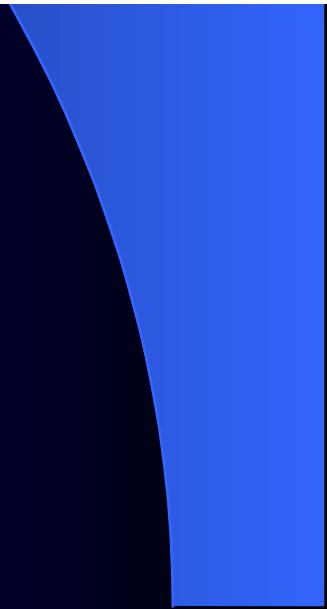








	A	B	C	
Shape	Oval	Diamond	Squiggle	(unique cards = 3)
Number	1	2	3	(unique cards = 9)



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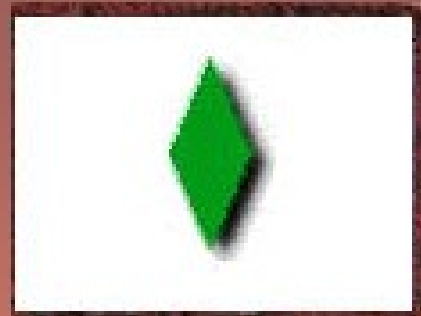
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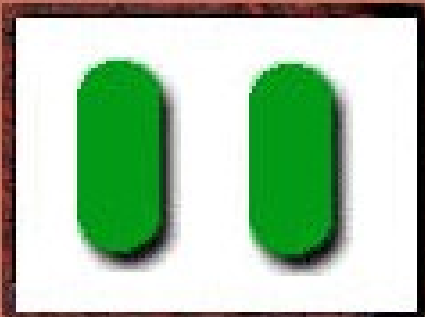
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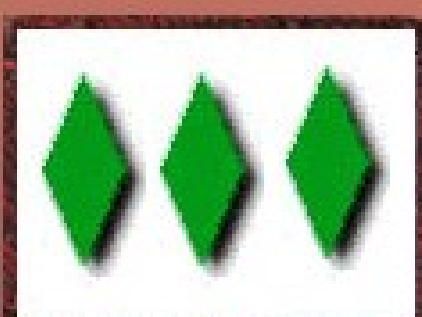
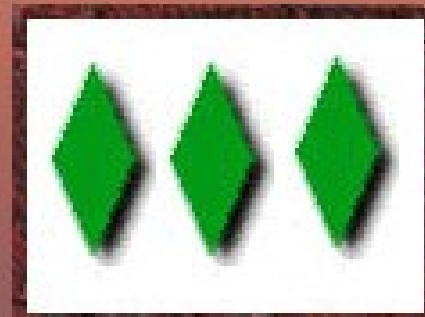
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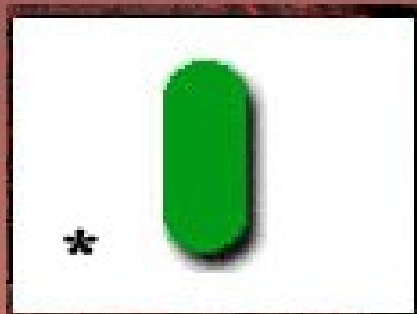


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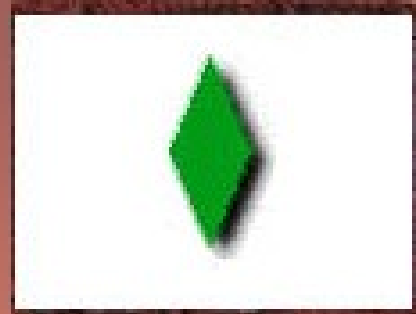
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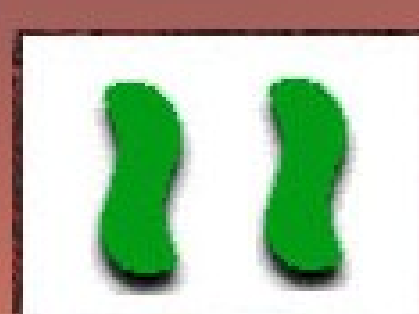
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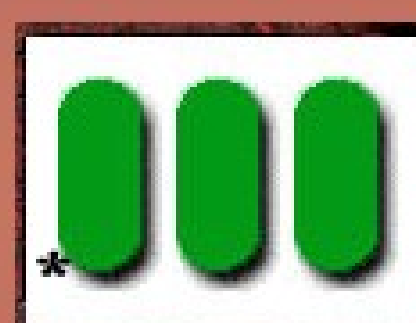
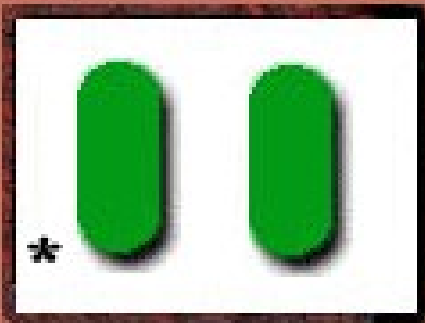
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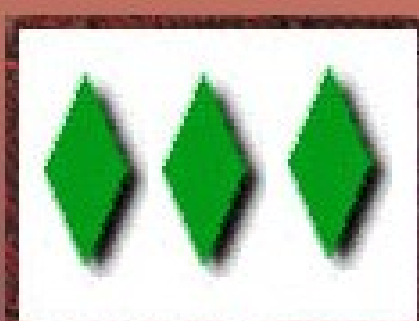
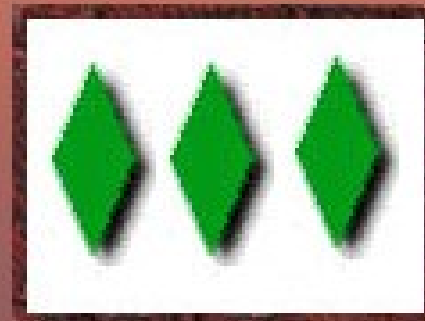
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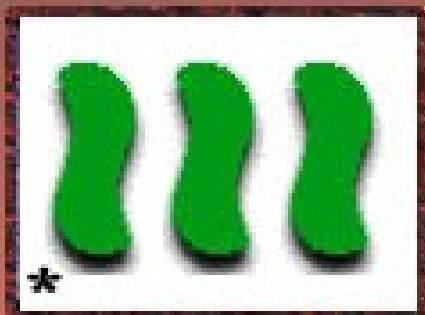


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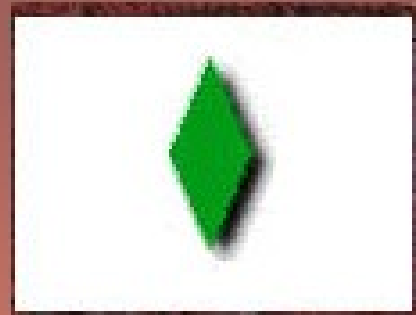
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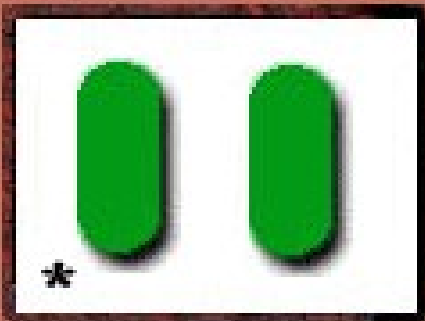
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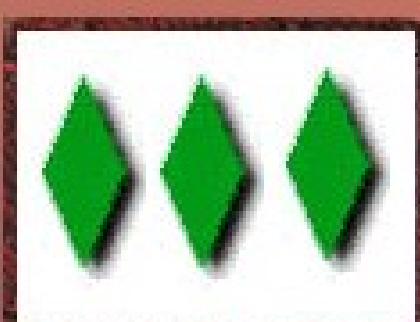
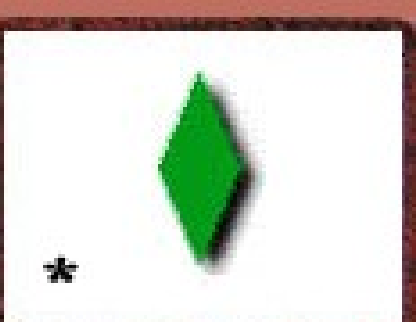
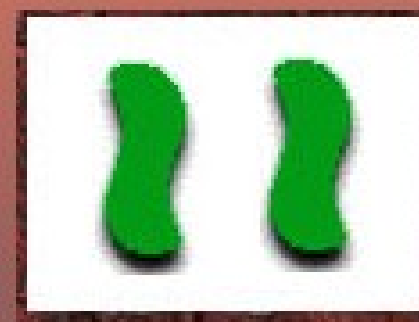
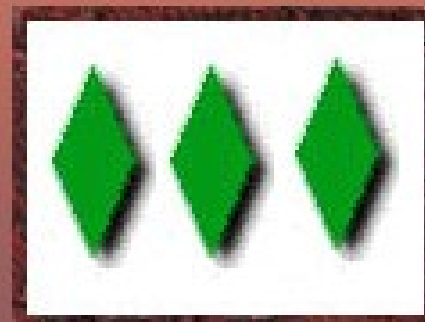
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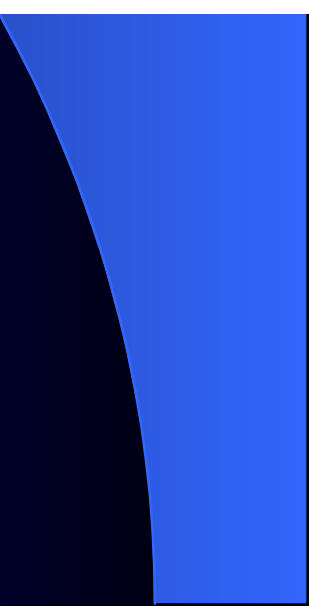


C





	A	B	C	
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Number	1	2	3	(unique cards = 9)
Pattern	Solid	Clear	Striped	(unique cards = 27)



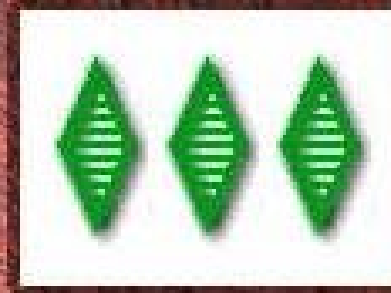
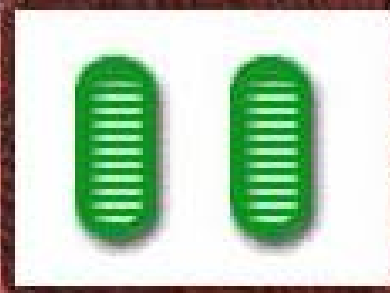
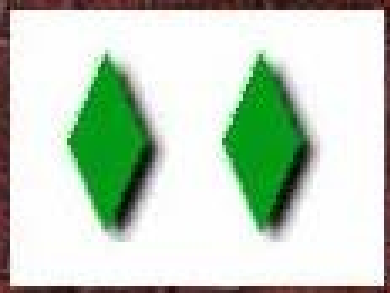
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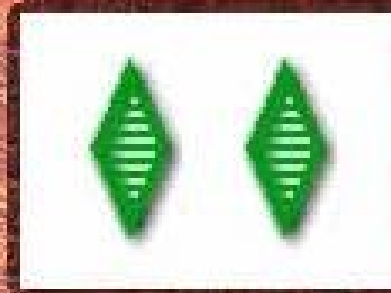
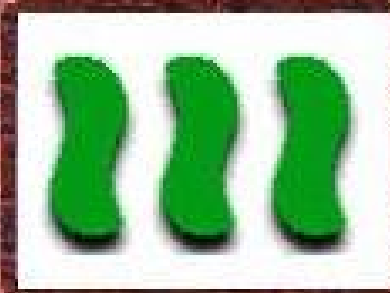
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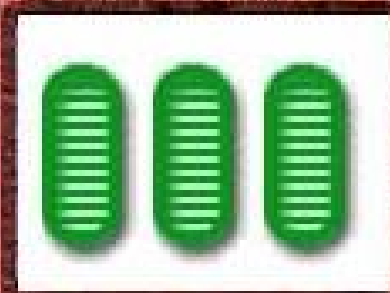
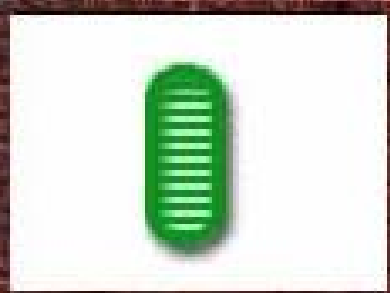
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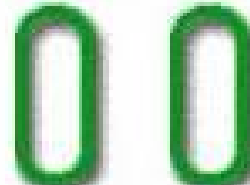
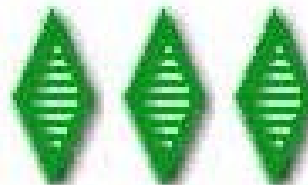
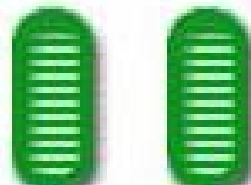
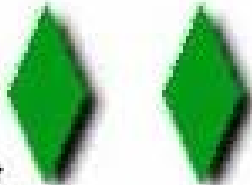
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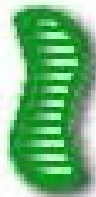
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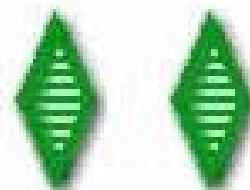
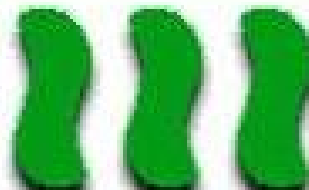
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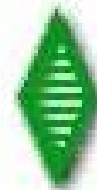
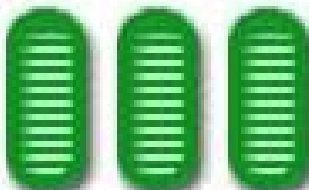
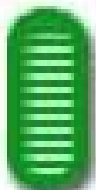
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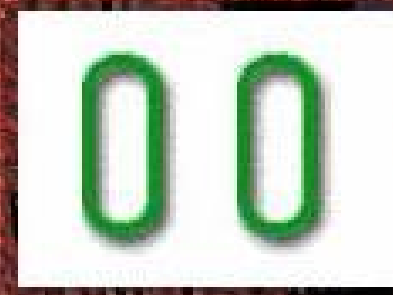
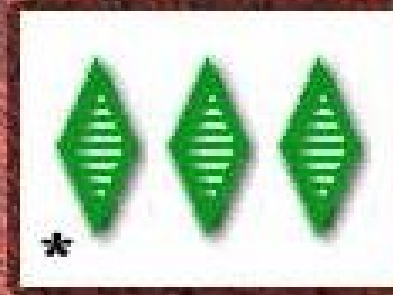
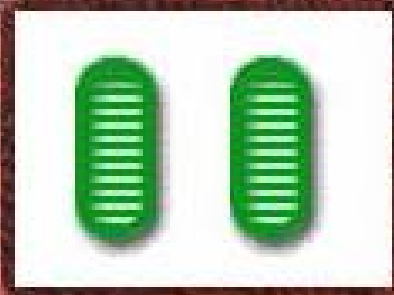
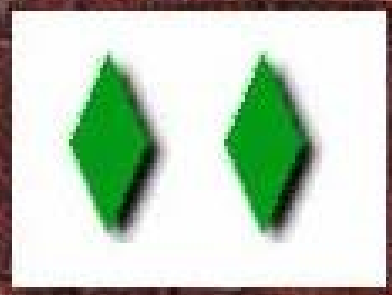
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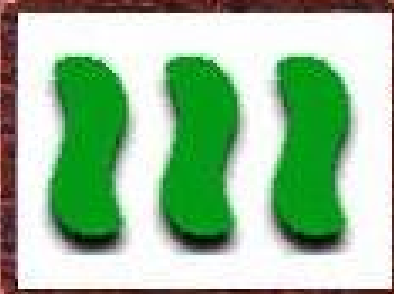
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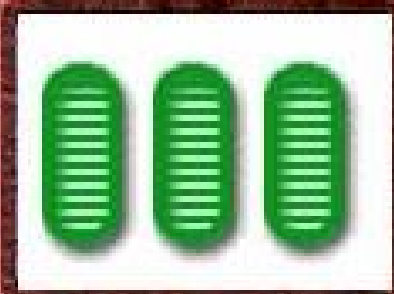
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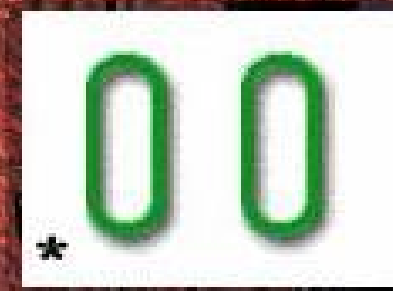
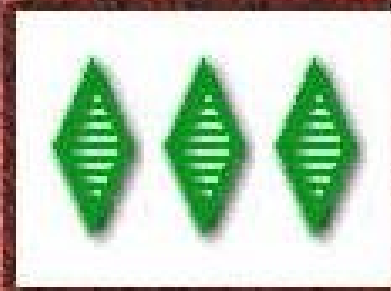
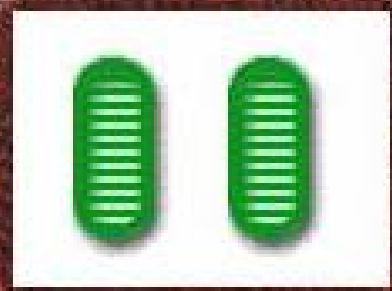
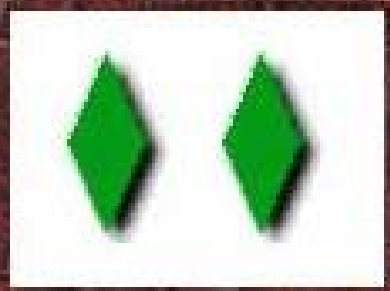
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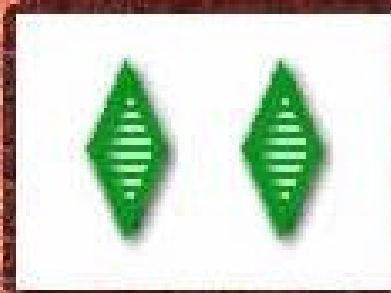
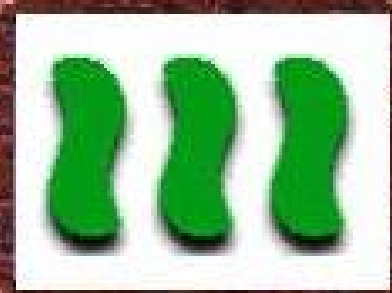
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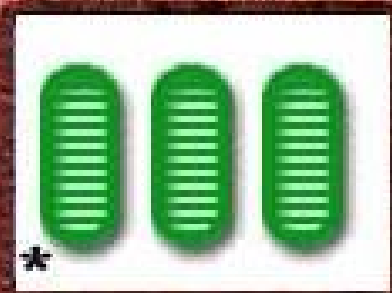
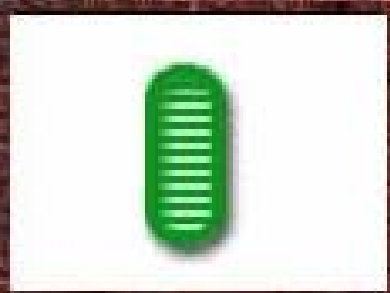
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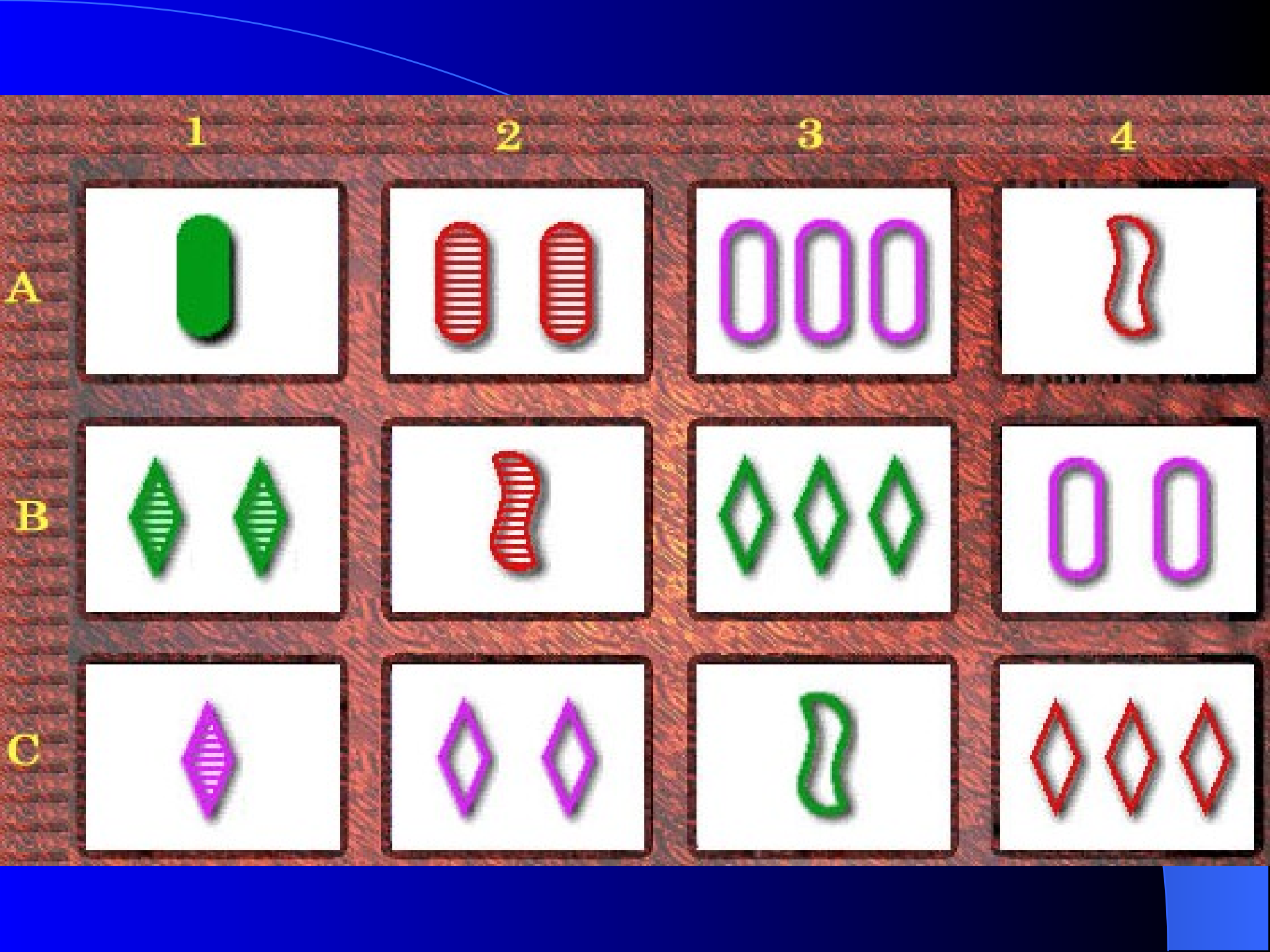
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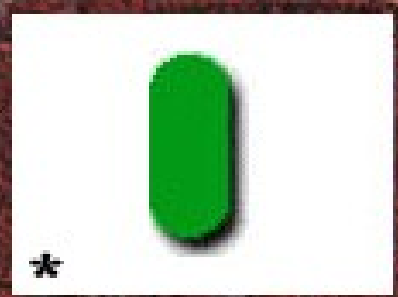


	A	B	C	
Shape	Oval	Diamond	Squiggle	(unique cards = 3)
Number	1	2	3	(unique cards = 9)
Pattern	Solid	Clear	Striped	(unique cards = 27)
Color	Green	Red	Purple	(unique cards = 81)

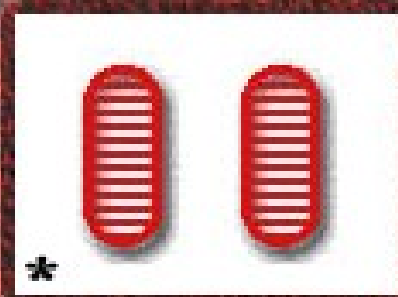


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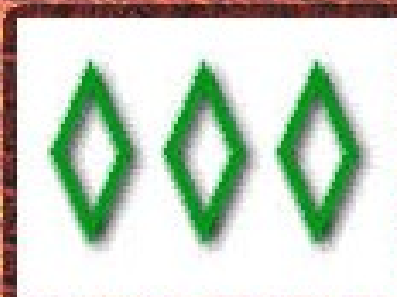
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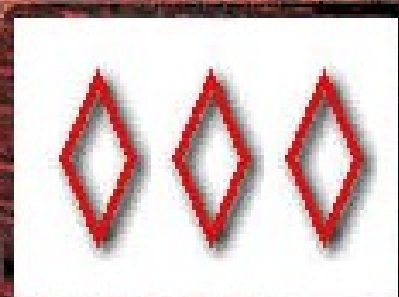
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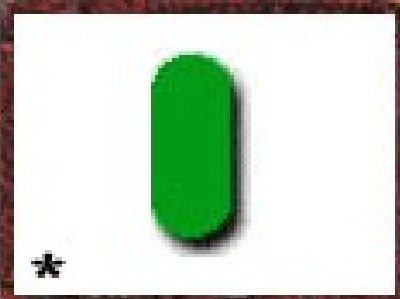


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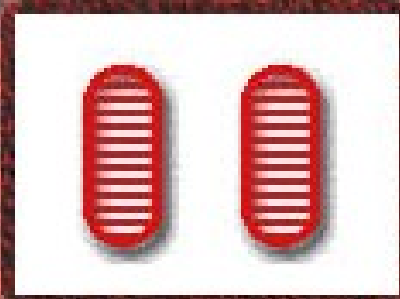
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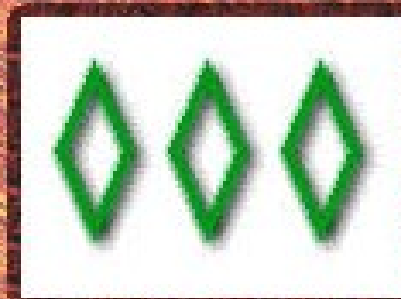


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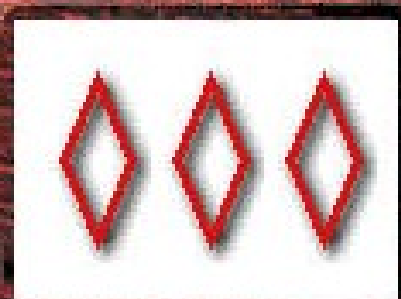
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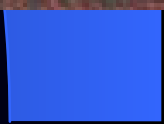
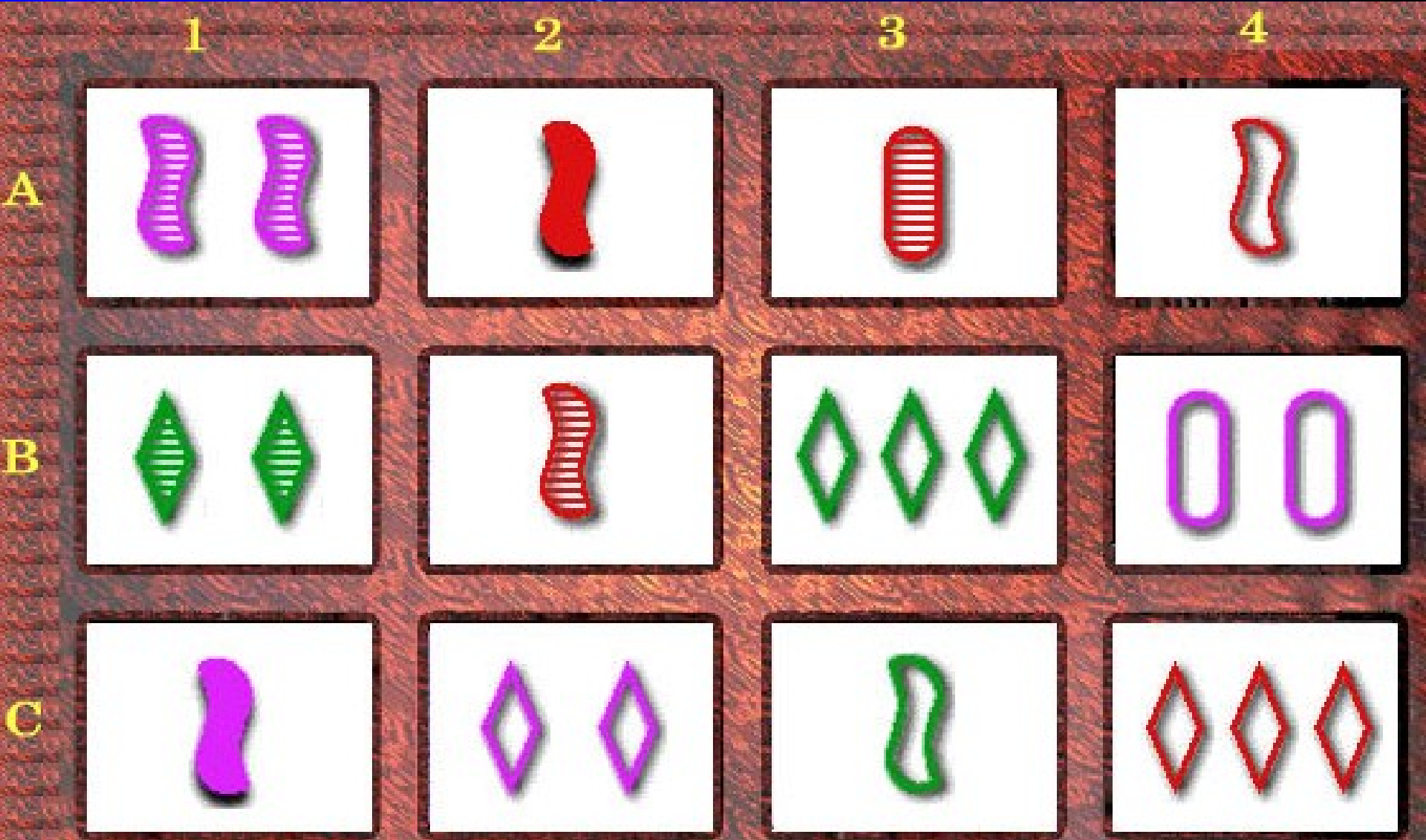


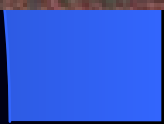
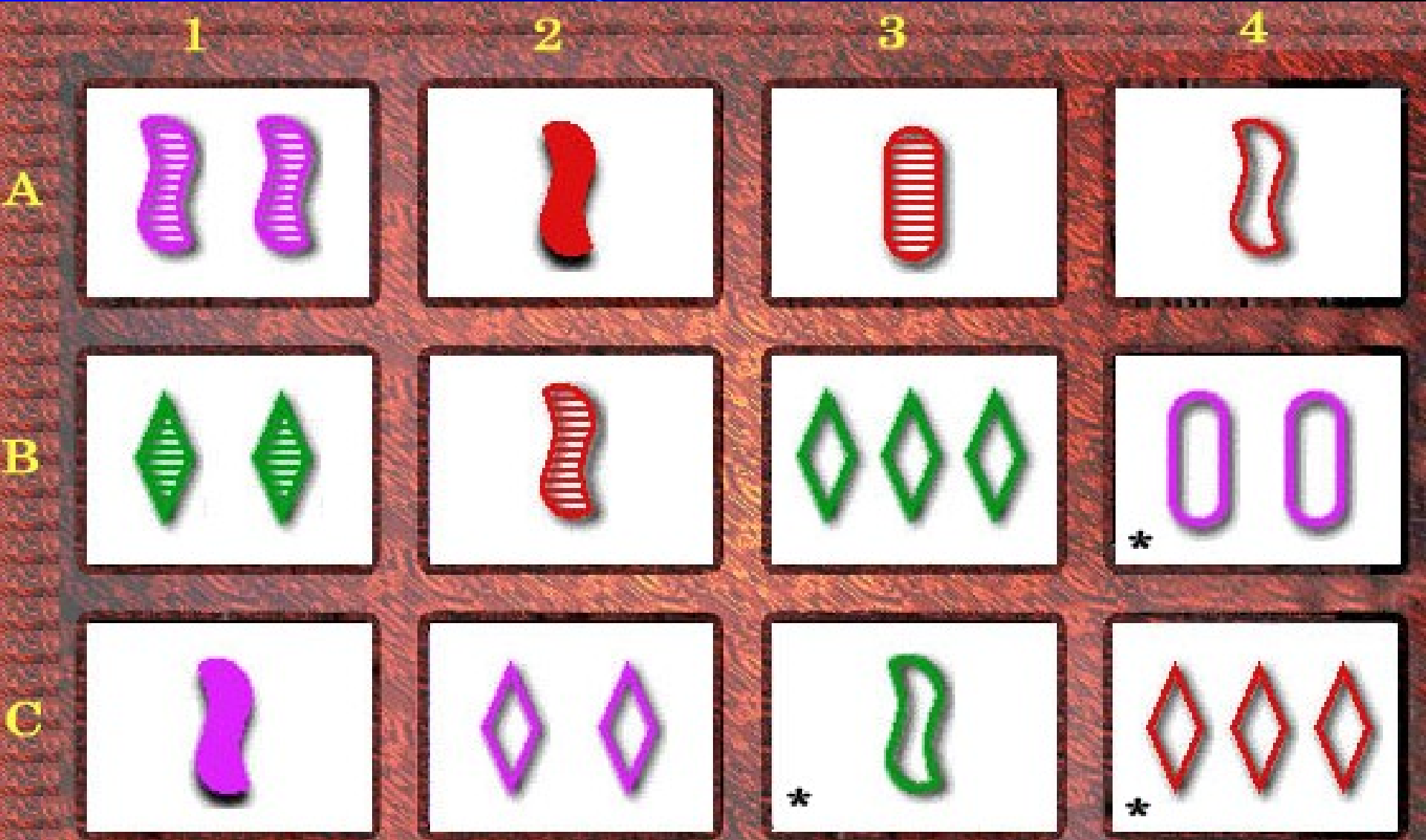
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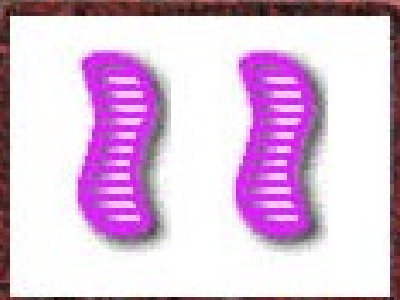






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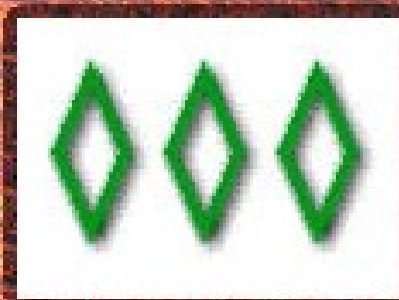
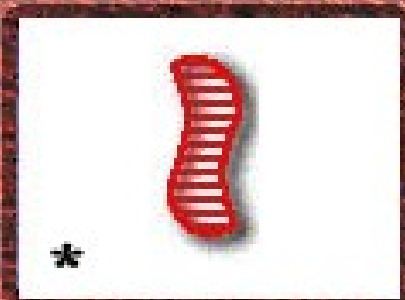
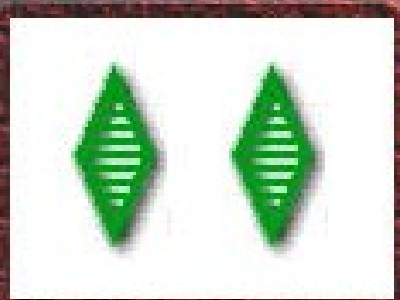
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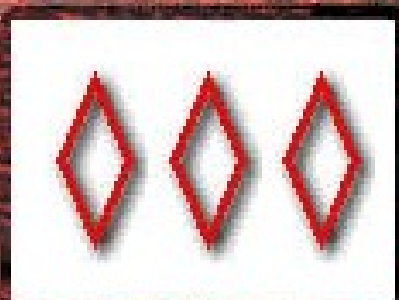
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B



C



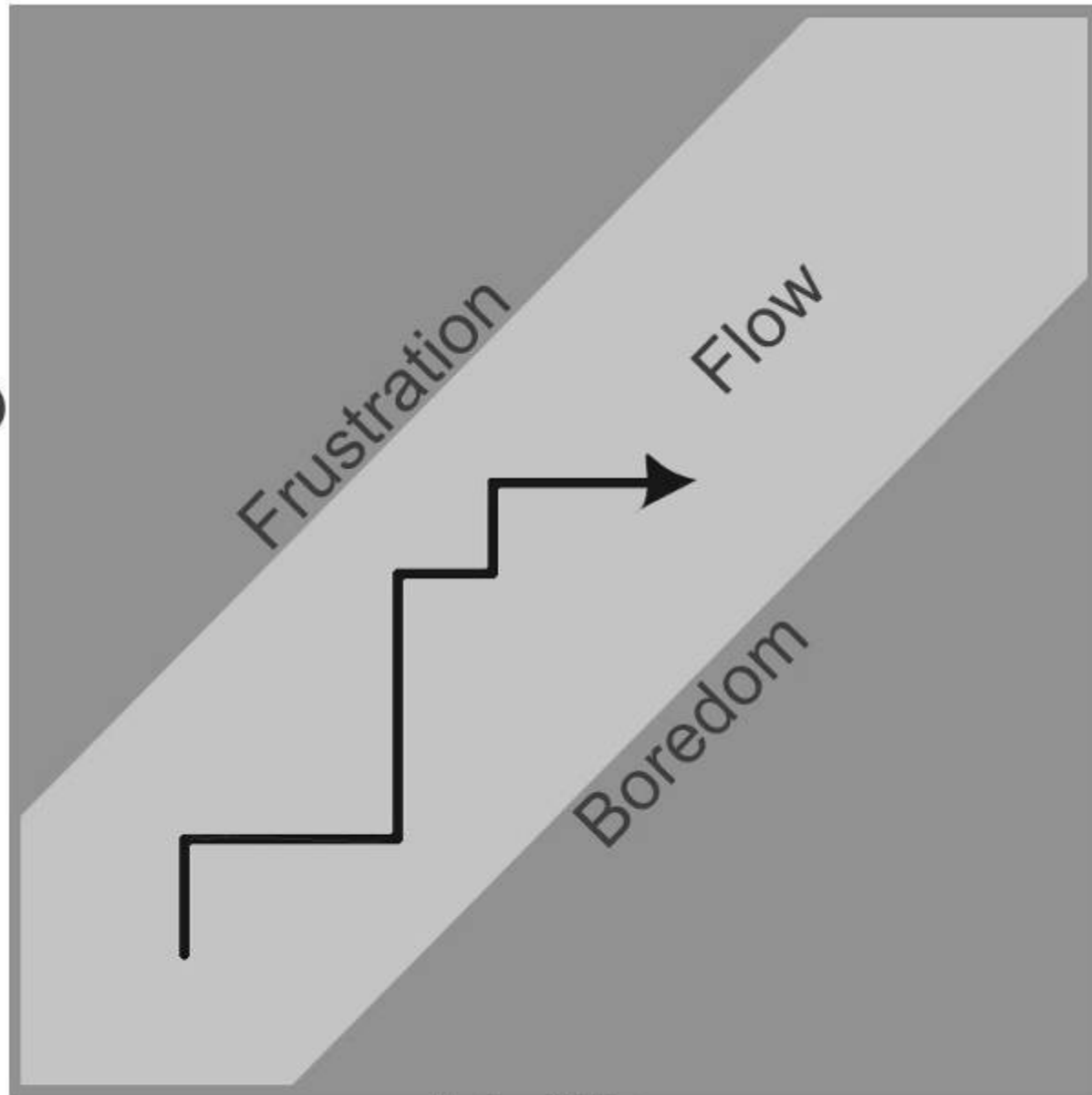
	A	B	C	
Shape	Oval	Diamond	Squiggle	(unique cards = 3)
Number	1	2	3	(unique cards = 9)
Pattern	Solid	Clear	Striped	(unique cards = 27)
Color	Green	Red	Purple	(unique cards = 81)
Background	White	Black	Grey	(unique cards = 243)

	A	B	C	
Shape	Oval	Diamond	Squiggle	(unique cards = 3)
Number	1	2	3	(unique cards = 9)
Pattern	Solid	Clear	Striped	(unique cards = 27)
Color	Green	Red	Purple	(unique cards = 81)
Background	White	Black	Grey	(unique cards = 243)
Background Border	Silver	Gold	Onyx	(unique cards = 729)

	A	B	C	
Shape	Oval	Diamond	Squiggle	(unique cards = 3)
Number	1	2	3	(unique cards = 9)
Pattern	Solid	Clear	Striped	(unique cards = 27)
Color	Green	Red	Purple	(unique cards = 81)
Background	White	Black	Grey	(unique cards = 243)
Background Border	Silver	Gold	Onyx	(unique cards = 729)
Animation	Still	Blinking	Rotating	(unique cards = 2187)

	A	B	C	D	
Shape	Oval	Diamond	Squiggle	X	(unique cards = 4)
Number	1	2	3	4	(unique cards = 16)
Pattern	Solid	Clear	Striped	Crosshatched	(unique cards = 64)
Color	Green	Red	Purple	Yellow	(unique cards = 256)
Background	White	Black	Light Grey	Dark Grey	(unique cards = 1024)
Background Border	Silver	Gold	Onyx	Jade	(unique cards = 4096)
Animation	Still	Blinking	Rotating	Bouncing	(unique cards = 16384)

Challenge

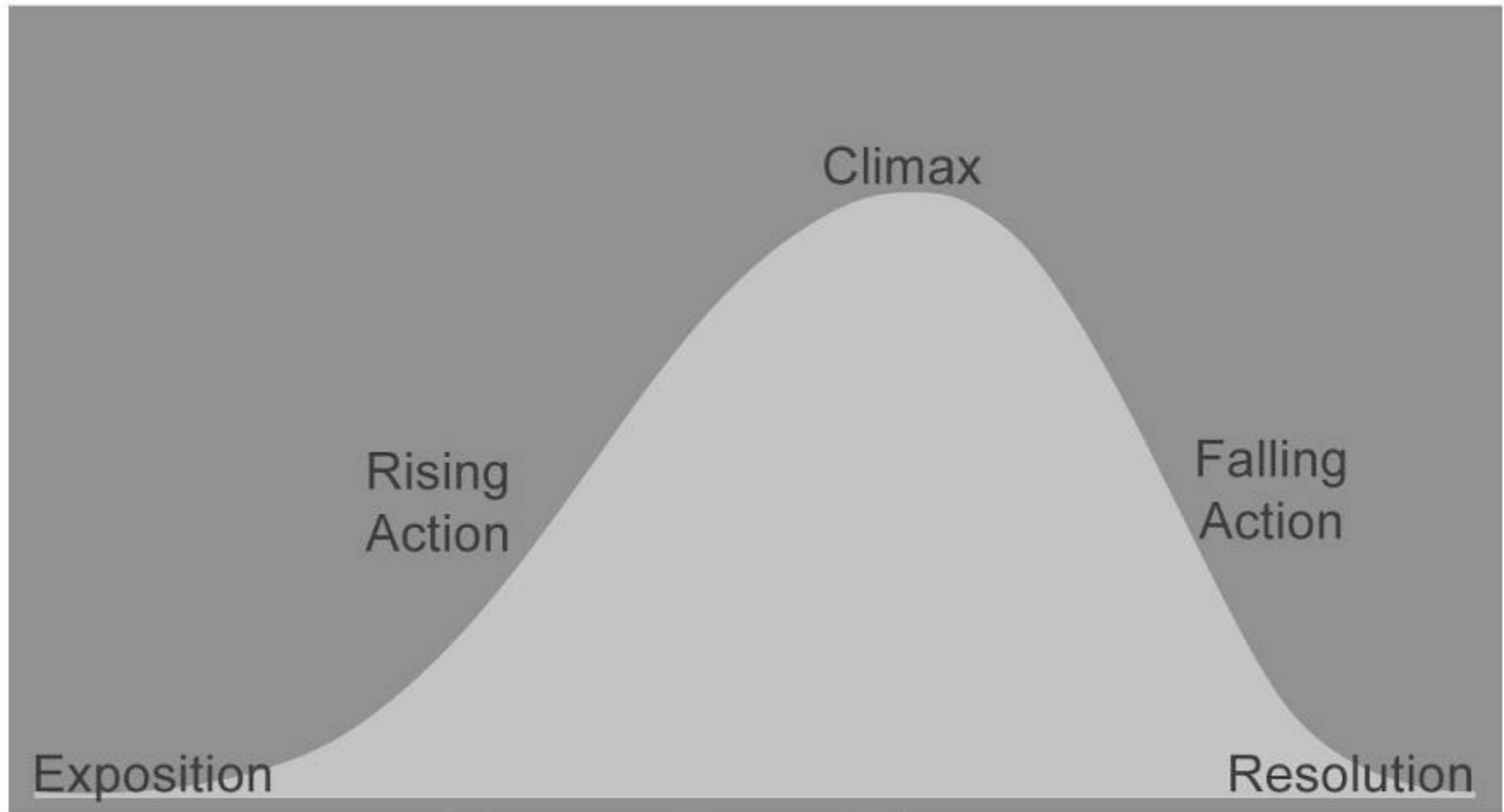


Ability

Dramatic Elements of Games

- Those aspects which give meaning and emotional context to the formal elements:
 - Challenge
 - Play
 - Premise
 - Character
 - Story

Narrative Tension



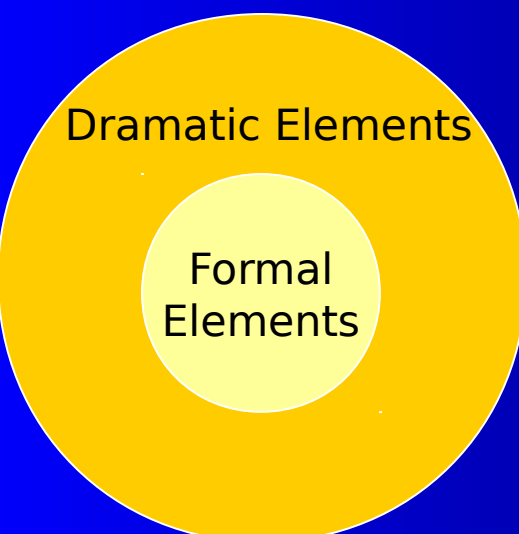
Narrative Time

Dynamic Elements of Games

- Those aspects of systems which arise from and influence the interaction of elements –the “emergent properties” of game play.

Balancing a game system

Design Formal + Dramatic



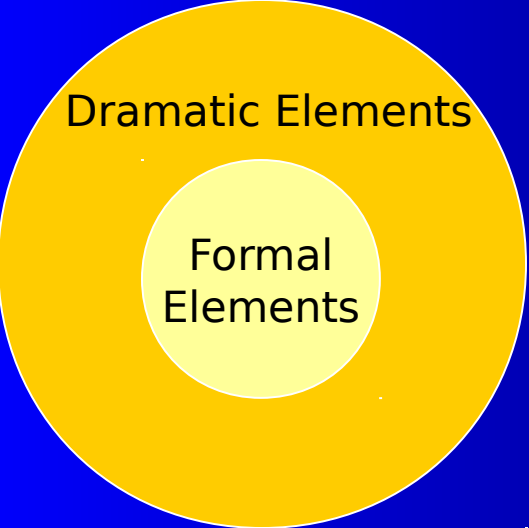
Dramatic Elements

Formal
Elements

Balancing a game system

Design Formal + Dramatic

Test For



Dramatic Elements

Formal
Elements

- Balanced (fair)
- Internally complete
- Fun

Balancing a game system

Design Formal + Dramatic

Test For

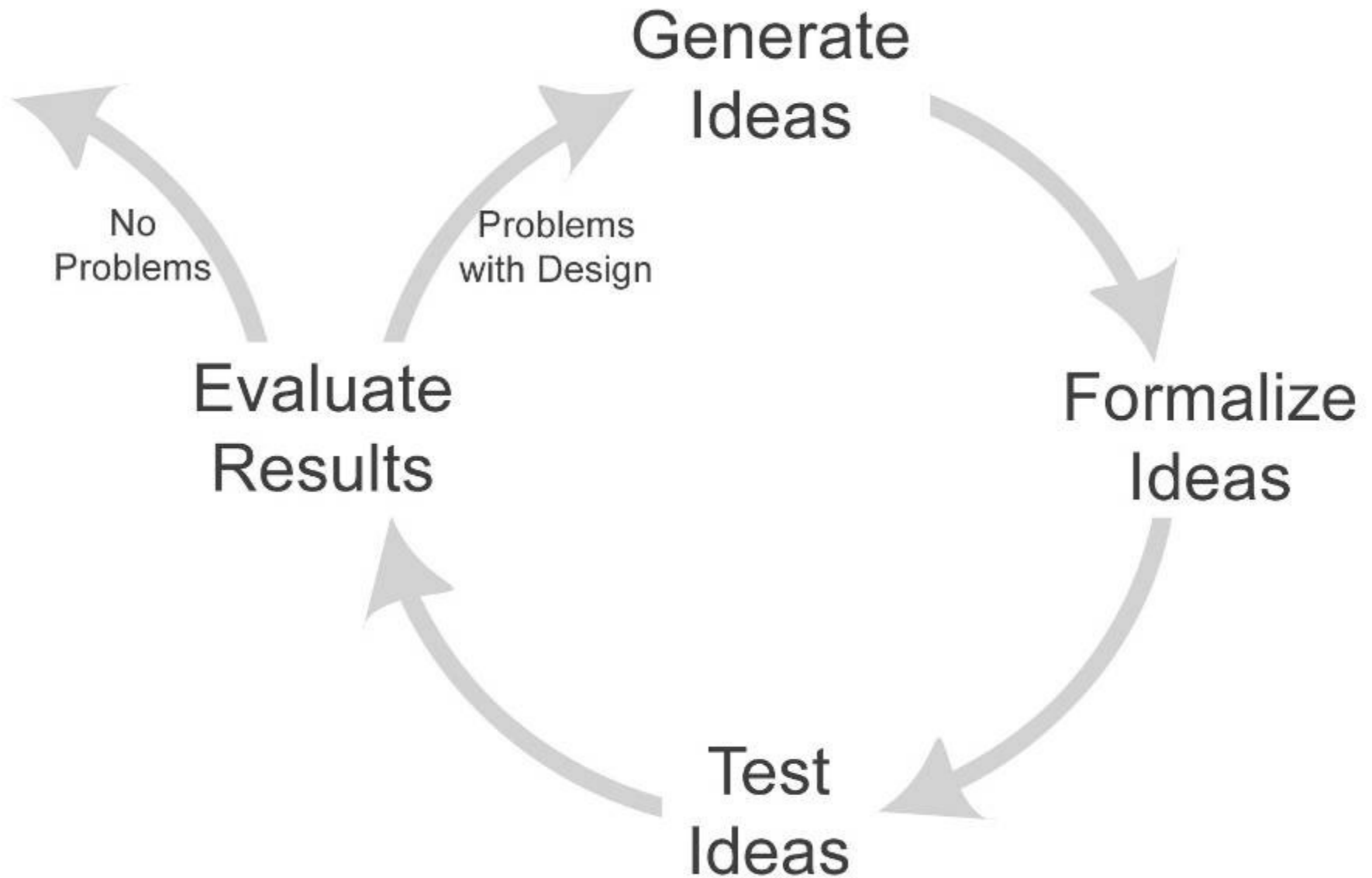
Tweak For

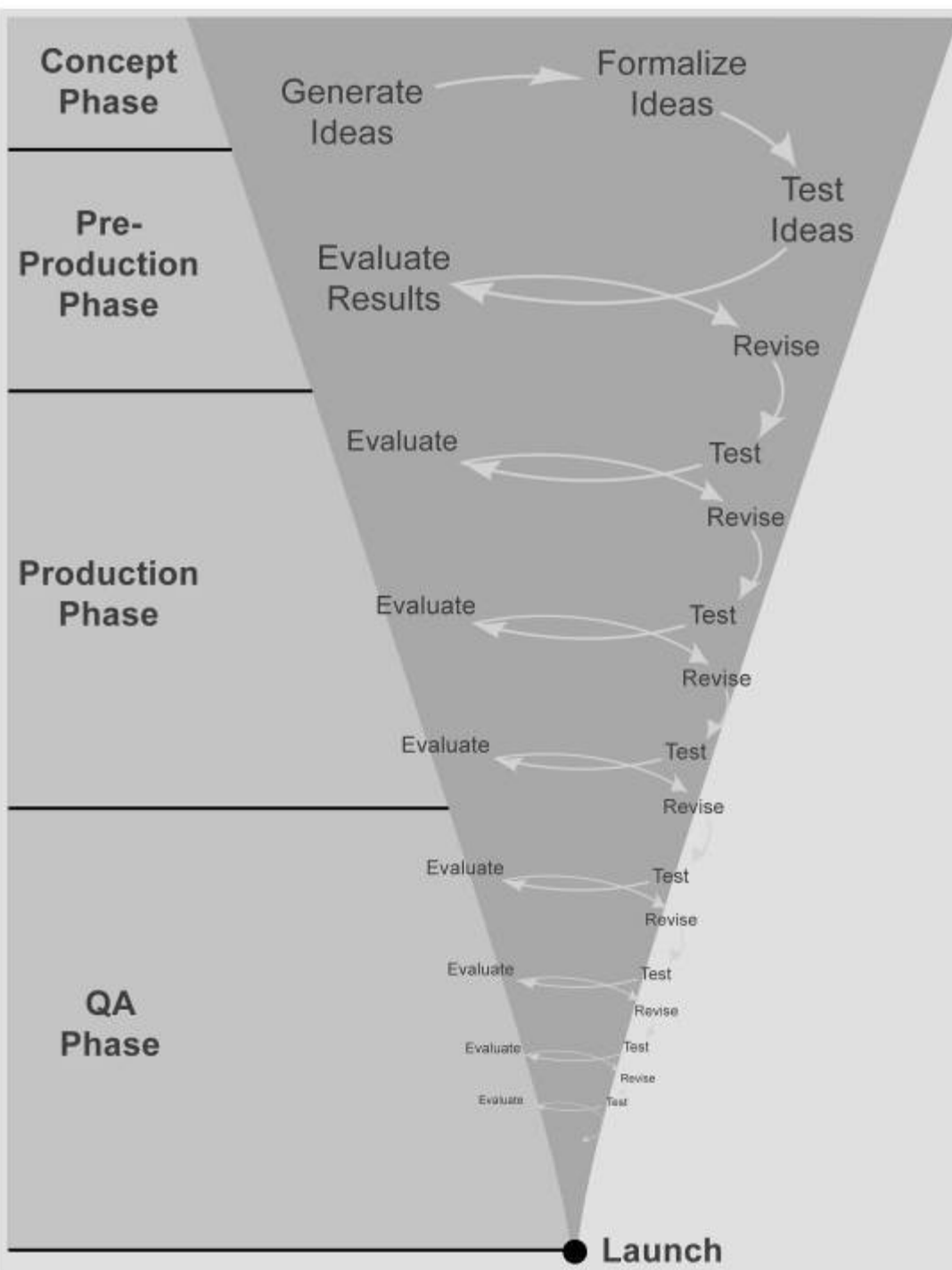
Dramatic Elements

Formal
Elements

- Balanced (fair)
- Internally complete
- Fun
- Challenge
- Strategy vs Chance
- Physical vs Mental
- Length of Experience
- Accessibility of Rules

Iterative Process





Best practices for teaching game design

- Playcentric Design
 - Teach fundamentals of games as systems
 - Teach iterative design
 - Give hands on exercises
- Have students work in teams
- Stress physical prototyping before software prototyping
- Everybody must playtest/critique as part of process of becoming game literate

Controlled Design Exercises

- Take existing games and make changes to the formal, dramatic & dynamic elements in order to create new games & learn process of prototyping, playtesting, response to feedback.
- Start with simple games.
- Even small changes can have great impacts.

Design Exercise (40 minutes)

- Why?
 - Hands on exercises best way to communicate game design concepts
- How?
 - Break into groups of 2
 - Go along with the following Connect Four slides

Connect Four (normal)

Set up:

- Draw a 7 wide x 6 tall grid on a sheet of paper.
- One player uses a circle to represent units on the grid and a second player uses an X to represent units. (Note: any two symbols or colors can be used as long as they are different).

Rules:

- Decide who goes first. Each player, on her turn, chooses a column in which to place a unit. She draws units at the bottom of the chosen column as if gravity dropped them from the top. Units stack on top of one another when they "land" in the grid.
- Players take turns dropping units until one player gets four units in a row - horizontally, vertically, or diagonally.
- The first player to get four in a row wins the game.

Note:

- For all exercises write down the start time and end time of the game next to the game grid.

Connect Four (alter grid size)

Set up:

- Draw a 8 wide x 6 tall grid on a sheet of paper.
- One player uses a circle to represent units on the grid and a second player uses an X to represent units. (Note: any two symbols or colors can be used as long as they are different).

Rules:

- Decide who goes first. Each player, on her turn, chooses a column in which to place a unit. She draws units at the bottom of the chosen column as if gravity dropped them from the top. Units stack on top of one another when they "land" in the grid.
- Players take turns dropping units until one player gets four units in a row - horizontally, vertically, or diagonally.
- The first player to get four in a row wins the game.

Note:

- For all exercises write down the start time and end time of the game next to the game grid.

Connect 4 (alter movement properties)

Set up:

- Draw a 7 wide x 6 tall grid on a sheet of paper.
- One player uses a circle to represent units on the grid and a second player uses an X to represent units. (Note: any two symbols or colors can be used as long as they are different).

Rules:

- Decide who goes first. **Each player, on her turn, places a unit in any open cell on the grid.**
- Players take turns **placing** units until one player gets four units in a row - horizontally, vertically, or diagonally.
- The first player to get four in a row wins the game.

Note:

- For all exercises write down the start time and end time of the game next to the game grid.

Connect Four (alter turn procedure)

Set up:

- Draw a 7 wide x 6 tall grid on a sheet of paper.
- One player uses a circle to represent units on the grid and a second player uses an X to represent units. (Note: any two symbols or colors can be used as long as they are different).

Rules:

- Decide who goes first. Each player, on her turn, chooses a column in which to place a unit. She draws units at the bottom of the chosen column as if gravity dropped them from the top. Units stack on top of one another when they "land" in the grid.
- After she places the first unit she then chooses a *different* column and places a second unit. After the second unit has been placed her turn is complete.
- Players take turns until one player gets four units in a row - horizontally, vertically, or diagonally.
- The first player to get four in a row wins the game.

Note:

- For all exercises write down the start time and end time of the game next to the game grid.

Connect Four (alter turn procedure two)

Set up:

- Draw a 7 wide x 6 tall grid on a sheet of paper.
- One player uses a circle to represent units on the grid and a second player uses an X to represent units. (Note: any two symbols or colors can be used as long as they are different).

Rules:

- Decide who goes first. Each player, on her turn, chooses a column in which to place a unit. She draws units at the bottom of the chosen column as if gravity dropped them from the top. Units stack on top of one another when they "land" in the grid.
- *After she places the first unit the player then places a second unit in any column she wishes. She has the option to place the second unit in the same column as the first. After the second unit has been placed her turn is complete..*
- Players take turns until one player gets four units in a row - horizontally, vertically, or diagonally.
- The first player to get four in a row wins the game.

Note:

- For all exercises write down the start time and end time of the game next to the game grid.

Connect 4 (alter number of players)

Set up:

- Draw a 7 wide x 6 tall grid on a sheet of paper.
- One player uses a circle to represent units on the grid and a second player uses an X to represent units, **a third player uses a triangle to represent units**. (Note: any **three** symbols or colors can be used as long as they are different).

Rules:

- Decide who goes first. Each player, on her turn, chooses a column in which to place a unit. She draws units at the bottom of the chosen column as if gravity dropped them from the top. Units stack on top of one another when they "land" in the grid.
- Players take turns dropping units until one player gets four units in a row - horizontally, vertically, or diagonally.
- The first player to get four in a row wins the game.

Note:

- For all exercises write down the start time and end time of the game next to the game grid.

???? (make your own variant)

Set up:

- Draw a ????? grid on a sheet of paper.
- One player uses a circle to represent units on the grid and a second player uses an X to represent units, ????? (Note: any ??? symbols or colors can be used as long as they are different).

Rules:

- ?????
- Players take turns until one player gets ????
- The first player to get ???? wins the game.

Note:

- For all exercises write down the start time and end time of the game next to the game grid.

Discussion and Questions

A decorative graphic consisting of a large, light blue arc that starts from the top left and curves towards the bottom right. A smaller, darker blue triangle is positioned at the end of this arc, pointing towards the bottom right corner of the slide.